AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

1. (previously presented) An acoustically damping composite article comprising:
a non-elastomeric polymeric matrix having therein a metal foam, said metal foam having an open cell structure, said metal foam being impregnated with said polymeric matrix so as to completely penetrate said open cell structure of said foam and fill the cells thereof; and
optionally, one or more additional components selected from a catalyst, a curing agent, a curing additive, and a release agent,
wherein the article comprises from about 60 to about 95 vol.% of the polymeric matrix.

2. (original) The composite article of claim 1, wherein said metal is selected from the group consisting of aluminum, aluminum base alloys, titanium, titanium base alloys, nickel, nickel base alloys, copper, copper base alloys, iron, iron base alloys, zinc, zinc base alloys, lead, lead base alloys, silver, silver base alloys, gold, gold base alloys, platinum, platinum base alloys, tantalum, and tantalum base alloys.

3. (original) The composite article of claim 1, wherein said polymer is selected from the groups consisting of epoxies, acrylics, hardened silicones, polyurethanes, polyimides, polyvinyls, polycarbonates, hardened natural rubbers, hardened synthetic rubbers, phenolics, polyolefins, polyamides, polyesters, fluoropolymers, poly(phenylene ether ketones), poly(phenylene ether sulfones), poly(phenylene sulfides) and melamine-formaldehyde resins.

4. (original) The composite article of claim 1, wherein said metal is an aluminum base alloy foam.

5. (withdrawn) The composite article of claim 1, wherein said metal is a copper foam or a copper base alloy foam.

6. (withdrawn) The composite article of claim 1, wherein said metal is a zinc foam or a zinc base alloy foam.

7. (original) The composite article of claim 3, wherein said metal is an aluminum foam or an aluminum base alloy foam.

8. (withdrawn) The composite article of claim 3, wherein said metal is a copper foam or a copper base alloy foam.

9. (withdrawn) The composite article of claim 3, wherein said metal is a zinc foam or a zinc base alloy foam.

10. (withdrawn) The composite article of claim 3, wherein said metal is a titanium foam or a titanium base alloy foam.

11. (original) The composite article of claim 1, wherein said polymer is an epoxy.

12. (withdrawn) The composite article of claim 1, wherein said polymer is an acrylic.

13. (withdrawn) The composite article of claim 1, wherein said polymer is a hardened silicone rubber.

14. (withdrawn) The composite article of claim 1, wherein said polymer is a hardened natural rubber.

15. (withdrawn) The composite article of claim 1, wherein said polymer is a hardened synthetic non-silicone rubber.

16. (withdrawn) The composite article of claim 1, wherein said polymer is a phenolic.

17. (original) The composite article of claim 1, wherein said cells have a locally uniform diameter.

18. (previously presented) The composite article of claim 1, wherein said metal foam has a gradation of pores sizes in at least one direction along the metal foam.

19. (original) A composite article according to claim 1, wherein said composite article is in the form of a sheet.

20. (previously presented) A laminate comprising a stack of sheets according to claim 19 bonded together.

21. (previously presented) An acoustically damping composite article comprising:
a polymeric matrix having therein a metal foam, said metal foam being impregnated with said polymeric matrix so as to completely penetrate said open cell structure of said foam and fill the cells thereof, said metal foam thickness no smaller than 3 times the average diameter of said cells; and
optionally, one or more additional components selected from a catalyst, a curing agent, a curing additive, and a release agent,
wherein the article comprises from about 60 to about 95 vol.% of the polymeric matrix.

22. (previously presented) A method of forming a composite comprising the steps of:
impregnating a metal foam, said metal foam having an open cell structure, with a resin component and optionally, one or more additional components selected from a catalyst, a curing agent, a curing additive, and a release agent so as to completely penetrate said open cell structure of said foam and fill the open cells of said metal foam with said resin component; and
converting said resin component, within said cells, to a bulk solid, non-elastomeric polymerized resin, thus forming a composite comprising:
a matrix of said non-elastomeric polymerized resin, said matrix having therein said metal foam and the optional additional component,
wherein the composite comprises from about 60 to about 95 vol.% of the matrix.

23. (previously presented) The composite article of claim 1, wherein the composite consists of the non-elastomeric polymeric matrix having therein a metal foam and optionally, one or more additional components selected from a catalyst, a curing agent, a curing additive, and a release agent.

24. (previously presented) The composite article of claim 21, wherein the composite consists of the non-elastomeric polymeric matrix having therein a metal foam and optionally, one or more additional components selected from a catalyst, a curing agent, a curing additive, and a release agent.

25. (previously presented) The method of claim 22, wherein the composite consists of the non-elastomeric polymeric matrix having therein a metal foam and optionally, one or more additional components selected from a catalyst, a curing agent, a curing additive, and a release agent.

26. (currently amended) The composite article of claim 1, wherein the article comprises from about 92 [[90]] to about 94 [[95]] vol.% of the polymeric matrix.

27. (currently amended) The composite article of claim 21, wherein the article comprises from about 92 [[90]] to about 94 [[95]] vol.% of the polymeric matrix.

28. (currently amended) The method of claim 22, wherein the composite comprises from about 92 [[90]] to about 94 [[95]] vol.% of the matrix.